SEQUENCE LISTING

<110> PURDUE RESEARCH FOUNDATION

<120> METHODS AND COMPOSITIONS TO INCREASE PLANT RESISTANCE TO STRESS

<130> 3220-74797

<140> PCT/US04/10599
<141> 2004-04-07

<150> 60/461,345
<151> 2003-04-09

<160> 10

<170> PatentIn Ver. 3.2

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<213> Arabidopsis thaliana

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Trp Thr Lys Glu Glu Asp Gln Arg Leu Ile Asp Tyr Ile Arg Asn His
             20                  25                  30

Gly Glu Gly Ser Trp Arg Ser Leu Pro Lys Ser Val Gly Leu Leu Arg
         35                  40                  45

Cys Gly Lys Ser Cys Arg Leu Arg Trp Ile Asn Tyr Leu Arg Pro Asp
     50                  55                  60

Leu Lys Arg Gly Asn Phe Thr Asp Gly Glu Glu Gln Ile Ile Val Lys
 65                  70                  75                  80

Leu His Ser Leu Phe Gly Asn Lys Trp Ser Leu Ile Ala Gly Lys Leu
                 85                  90                  95

Pro Gly Arg Thr Asp Asn Glu Ile Lys Asn Tyr Trp Asn Thr His Ile
            100                 105                 110

Lys Arg Lys Leu Leu Asn Arg Gly Ile Asp Pro Lys Thr His Gly Ser
        115                 120                 125

Ile Ile Glu Pro Lys Thr Thr Ser Phe His Pro Arg Asn Glu Asp Leu
    130                 135                 140

Lys Ser Thr Phe Pro Gly Ser Val Lys Leu Lys Met Glu Thr Ser Cys
145                 150                 155                 160

Asn Cys Ala Ser Thr Ser Gly Thr Thr Thr Asp Glu Asp Leu Arg Leu
                165                 170                 175

Ser Val Asp Cys Asp Tyr Arg Tyr Asp His Leu Asp Lys Glu Leu Asn
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Leu Asp Leu Thr Leu Gly Tyr Ser Pro Thr Arg Phe Val Gly Val Gly
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Ser Cys Tyr
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cctaaatccg ttgggttgtt gcgttgtgga aaaagttgta gattaagatg gattaattac 180
cttcgtcctg atcttaaacg tggaaatttc actgatggtg aagagcaaat cattgtcaaa 240
cttcatagtt tatttggcaa caaatggtct ttgattgctg ggaaattacc gggaagaacc 300
gataatgaga ttaaaaatta ttggaacact catataaaaa ggaagcttct taaccgtggt 360
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aatgaagatt tgaagtccac gtttcccggt tctgttaaac taaagatgga gacttcttgt 480
gaaaactgtg cttctacgag cggtacgact acggacgagg atttacggtt aagtgttgat 540
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Trp Thr Lys Glu Glu Asp Gln Arg Leu Val Asp Tyr Ile Arg Asn His
             20                  25                  30

Gly Glu Gly Cys Trp Arg Ser Leu Pro Lys Ser Ala Gly Leu Leu Arg
         35                  40                  45

Cys Gly Lys Ser Cys Arg Leu Arg Trp Ile Asn Tyr Leu Arg Pro Asp
     50                  55                  60

Leu Lys Arg Gly Asn Phe Thr Asp Asp Glu Asp Gln Ile Ile Ile Lys
 65                  70                  75                  80

Leu His Ser Leu Leu Gly Asn Lys Trp Ser Leu Ile Ala Gly Arg Leu
                 85                  90                  95

Pro Gly Arg Thr Asp Asn Glu Ile Lys Asn Tyr Trp Asn Thr His Ile
            100                 105                 110

Lys Arg Lys Leu Leu Ser His Gly Ile Asp Pro Gln Thr His Arg Gln
        115                 120                 125

Ile Asn Glu Ser Lys Thr Val Ser Ser Gln Val Val Val Pro Ile Gln
    130                 135                 140

Asn Asp Ala Val Glu Tyr Ser Phe Ser Asn Leu Ala Val Lys Pro Lys
145                 150                 155                 160
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Thr Glu Asn Ser Ser Asp Asn Gly Ala Ser Thr Ser Gly Thr Thr Thr
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Asp Glu Asp Leu Arg Gln Asn Gly Glu Cys Tyr Tyr Ser Asp Asn Ser
            180                 185                 190

Gly His Ile Lys Leu Asn Leu Asp Leu Thr Leu Gly Phe Gly Ser Trp
        195                 200                 205

Ser Gly Arg Ile Val Gly Val Gly Ser Ser Ala Asp Ser Lys Pro Trp
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Cys Asp Pro Val Met Glu Ala Arg Leu Ser Leu Leu
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<213> Gossypium hirsutum

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Trp Thr Lys Glu Glu Asp Gln Arg Leu Ile Asn Tyr Ile Arg Val His
            20                  25                  30

Gly Glu Gly Cys Trp Arg Ser Leu Pro Lys Ala Ala Gly Leu Leu Arg
        35                  40                  45

Cys Gly Lys Ser Cys Arg Leu Arg Trp Ile Asn Tyr Leu Arg Pro Asp
    50                  55                  60

Leu Lys Arg Gly Asn Phe Thr Glu Glu Glu Asp Glu Leu Ile Ile Lys
65                  70                  75                  80

Leu His Ser Leu Leu Gly Asn Lys Trp Ser Leu Ile Ala Gly Arg Leu
                85                  90                  95

Pro Gly Arg Thr Asp Asn Glu Ile Lys Asn Tyr Trp Asn Thr His Ile
            100                 105                 110

Lys Arg Lys Leu Ile Ser Arg Gly Ile Asp Pro Gln Thr His Arg Pro
        115                 120                 125

Leu Asn Gln Thr Ala Asn Thr Asn Thr Val Thr Ala Pro Thr Glu Leu
    130                 135                 140

Asp Phe Arg Asn Thr Pro Thr Ser Val Ser Lys Ser Ser Ser Ile Lys
145                 150                 155                 160

Asn Pro Ser Leu Asp Phe Asn Tyr Asn Glu Phe Gln Phe Lys Ser Asn
                165                 170                 175

Thr Asp Ser Leu Glu Glu Pro Asn Cys Thr Thr Ser Ser Gly Met Thr
            180                 185                 190

Thr Asp Glu Glu Gln Gln Glu Gln Leu His Lys Gln Gln Gln Tyr Asp
        195                 200                 205
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Pro Ser Asn Gly Gln Asp Leu Asn Leu Glu Leu Ser Ile Gly Ile Val
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Ser Ala Asp Ser Ser Arg Val Ser Ser Ala Asn Ser Ala Glu Ser Lys
225                 230                 235                 240

Pro Lys Val Asp Asn Asn Asn Phe Gln Phe Leu Glu Gln Ala Met Val
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Ala Lys Ala Val Cys Leu Cys Trp Gln Leu Gly Phe Gly Thr Ser Glu
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Cys Arg Pro Leu Asp Ser
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Trp Thr Lys Glu Glu Asp Gln Arg Leu Ile Ala Tyr Ile Arg Ala His
            20                  25                  30

Gly Glu Gly Cys Trp Arg Ser Leu Pro Lys Ala Ala Gly Leu Leu Arg
        35                  40                  45

Cys Gly Lys Ser Cys Arg Leu Arg Trp Met Asn Tyr Leu Arg Pro Asp
    50                  55                  60

Leu Lys Arg Gly Asn Phe Thr Asp Asp Glu Asp Glu Leu Ile Ile Arg
65                  70                  75                  80

Leu His Ser Leu Leu Gly Asn Lys Trp Ser Leu Ile Ala Gly Gln Leu
                85                  90                  95

Pro Gly Arg Thr Asp Asn Glu Ile Lys Asn Tyr Trp Asn Thr His Ile
            100                 105                 110

Lys Arg Lys Leu Leu Ala Arg Gly Ile Asp Pro Gln Thr His Arg Pro
        115                 120                 125

Leu Leu Ser Gly Gly Asp Gly Ile Ala Ala Ser Asn Lys Arg His His
    130                 135                 140

Arg Arg Arg Ile Pro Tyr Pro Ser Arg Arg Arg Arg Arg Pro Arg Arg
145                 150                 155                 160

Ser Ser Pro Cys Glu Ala Ala Ala Ala Ala Ala Pro Gly Arg Leu Leu
                165                 170                 175

Gly Arg Arg Leu Pro Gln Gln Gln Arg His Asn Glu His Gly Gly Ala
            180                 185                 190
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Ala Val Pro Arg Pro Gln Pro Arg Ala Leu Gly Arg Ala Asp Ala Glu
        195                 200                 205

Leu Ala Ala Gly Gly Asp Ala His Gln Arg Ala Ala Gly Leu Pro Leu
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Leu Pro Pro Arg Leu Pro Arg Arg Gly Gly Val Gln Leu Ser Gly
225                 230                 235


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<213> Lycopersicon esculentum

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Trp Thr Lys Glu Glu Asp Glu Arg Leu Ile Ser Tyr Ile Arg Ala His
             20                  25                  30

Gly Glu Gly Cys Trp Arg Ser Leu Pro Lys Ala Ala Gly Leu Leu Arg
         35                  40                  45

Cys Gly Lys Ser Cys Arg Leu Arg Trp Ile Asn Tyr Leu Arg Pro Asp
     50                  55                  60

Leu Lys Arg Gly Asn Phe Thr Glu Glu Glu Asp Glu Leu Ile Ile Lys
 65                  70                  75                  80

Leu His Ser Leu Leu Gly Asn Lys Trp Ser Leu Ile Ala Gly Arg Leu
                 85                  90                  95

Pro Gly Arg Thr Asp Asn Glu Ile Lys Asn Tyr Trp Asn Thr His Ile
            100                 105                 110

Arg Arg Lys Leu Leu Ser Arg Gly Ile Asp Pro Thr Thr His Arg Ser
        115                 120                 125

Ile Asn Asp Pro Thr Thr Ile Pro Lys Val Thr Thr Ile Thr Phe Ala
    130                 135                 140

Ala Ala His Glu Asn Ile Lys Asp Ile Asp Gln Gln Asp Glu Met Ile
145                 150                 155                 160

Asn Ile Lys Ala Glu Phe Val Glu Thr Ser Lys Glu Ser Asp Asn Asn
                165                 170                 175

Glu Ile Ile Gln Glu Lys Ser Ser Ser Cys Leu Pro Asp Leu Asn Leu
            180                 185                 190

Glu Leu Arg Ile Ser Pro Pro His His Gln Gln Leu Asp His His Arg
        195                 200                 205

His His Gln Arg Ser Ser Ser Leu Cys Phe Thr Cys Ser Leu Gly Ile
    210                 215                 220

Gln Asn Ser Lys Asp Cys Ser Cys Gly Ser Glu Ser Asn Gly Asn Gly
225                 230                 235                 240
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Trp Ser Asn Asn Met Val Ser Met Asn Ile Met Ala Gly Tyr Asp Phe
245 250 255

Leu Gly Leu Lys Thr Asn Gly Leu Leu Asp Tyr Arg Thr Leu Glu Thr
260 265 270

Lys

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<210> 10
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